

Borrisbeg Grid Connection

Chapter 1 Introduction

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Chapter 1 Introduction

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1 Introduction

1.1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by RPS on behalf of Buirios Ltd, as part of an application for planning permission for the Proposed Grid Connection to serve the Consented Wind Farm. The Proposed Grid Connection is located in the townlands of Strogue and Clonmore, near Templemore town in Co. Tipperary.

Both the components and function of the Proposed Grid Connection fall within the scope of Section 182A (1) of the Planning and Development Acts 2000, as amended, as determined by An Coimisiún Pleanála (Planning Reference 317089), based upon the definition of electricity transmission as set out in Subsection 9 of Section 182A of the Act and therefore this application is being submitted directly to An Coimisiún Pleanála (ACP) in accordance with Section 182A of the Planning and Development Acts 2000, as amended.

1.1.1 Statement of Authority

This section of the EIAR, has been prepared by Karen Mulryan and reviewed by Paul Chadwick, of RPS. Karen is a Senior Environmental Scientist with RPS with over 9 years' experience in the consultancy sector. Karen holds a BA in International in Archaeology from NUI Galway and a MSc in Archaeology from the University of Edinburgh. Karen's expertise is in project management, environmental impact assessment, wind energy site selection and feasibility assessment. Karen has experience managing wind farm Environmental Impact Assessment Report applications of various scales including SID applications across Ireland. Karen holds memberships with the Chartered Institute for Archaeologists (ACIfA) and the Institute of Archaeologists of Ireland (IAI).

Paul is a Technical Director with the Energy, Environment and Resources Sector and leads the team responsible for environmental, waste and resource management and assessment of infrastructural and industrial projects for RPS in Ireland. Paul specialises in the fields of air quality and climate. He has considerable experience, both academic and professional, in ambient air quality and a wide range of atmospheric pollutants from waste / wastewater, road traffic, air traffic, industrial and stationary sources. As a result of two years research in atmospheric chemistry, he has an in-depth knowledge of the chemical and physical transformations associated with local and regional air pollution and climate change. Paul is a trained and experienced expert witness and is supported by a team of multidisciplinary environmental experts across RPS in Ireland.

1.2 Background

The Proposed Grid Connection will facilitate the connection of the consented Borrisbeg Renewable Energy Development Wind Farm, Planning Reference ABP: 318704 which comprises 9 No. wind turbines with a tip height of 185 metres with an estimated installed generating capacity of 63MW (herein referred to as the "Consented Wind Farm").

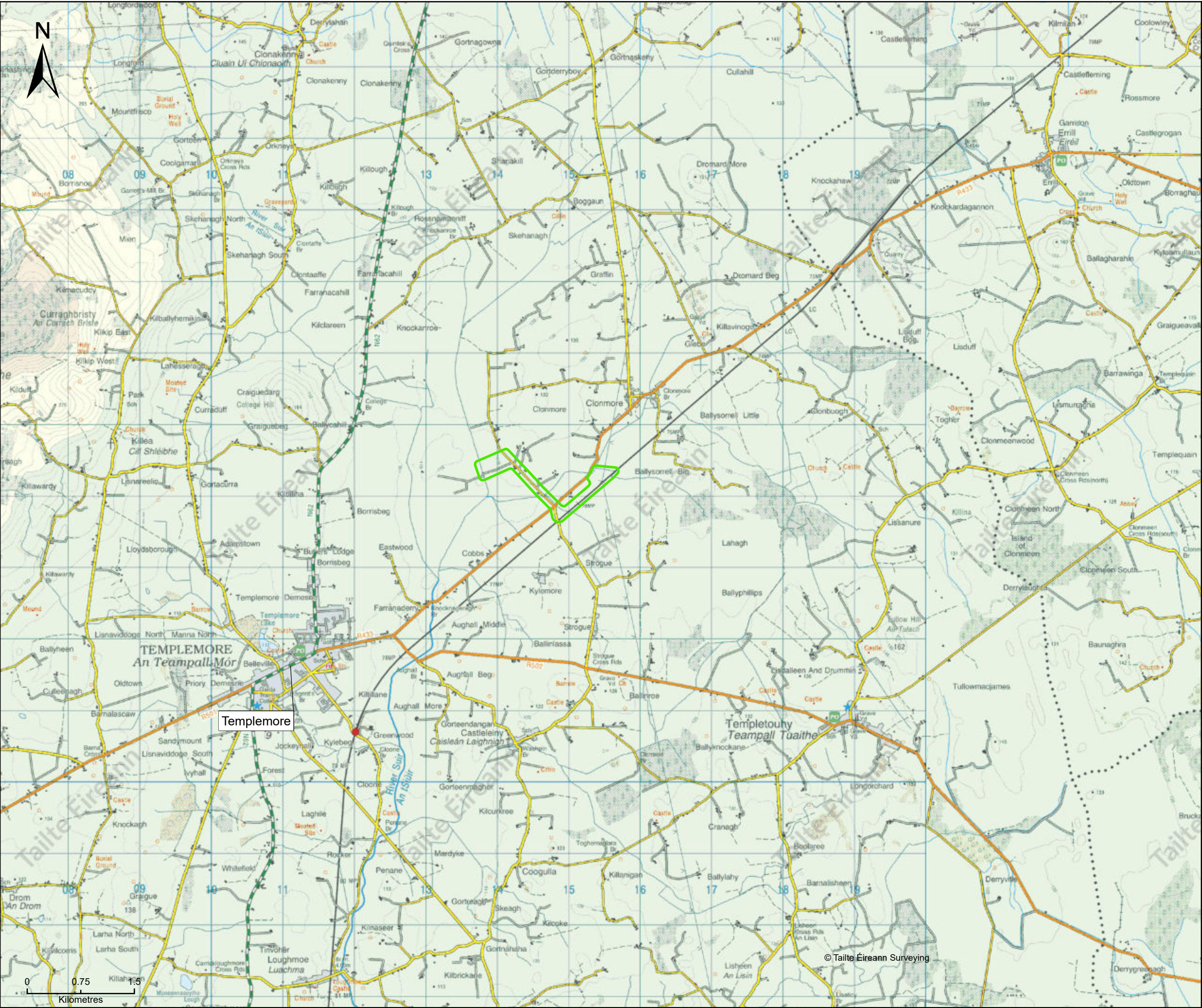
The Proposed Grid Connection will connect to the national grid via a 'loop-in-loop-out' connection. The onsite 110kV substation will connect to the nearby Ikerrin to Thurles 110kV overhead line (OHL) via approx. 2.1km of underground electricity cabling which will run in a south-eastward direction from the proposed onsite 110kV substation through a mix of local road and new track over agricultural land to the existing OHL. The existing OHL will be broken by 2 no. end masts (lattice type towers).

A full and detailed development description is contained in Chapter 3 of this EIAR.

1.3 Site Location

The “Site” (EIAR Study Boundary) is located within a rural setting in north Tipperary, approximately 14.5km south of Roscrea Town and approximately 3.8km northeast of Templemore town centre. The Site location context is shown in Figure 1-1. The Site measures approximately 47.5 hectares and falls within the townlands of Clonmore, Stroque, and Ballycahill. Landuse currently comprises a mix of pastoral agriculture and local roads. The surrounding landuse predominantly comprises pastoral agriculture, local roads and commercial and residential within Templemore town. Existing access is the L-7039, L-70391, L7038 in the southeast.

Upgrades to the L-70391 local road within the Site and upgrade of the junction between the L-70391 and the L-7039 will be undertaken as part the Consented Wind Farm. The consented works will result in the widening of 460m of the L-70391 road and resurfacing of the of the entire L-70391 (approx. 1.1km total length). This Site entrance will provide operational access for maintenance of the Proposed Grid Connection and the Consented Wind Farm, as well as maintenance the existing public access to lands involved in both projects.



Map Legend
EIAR Study Boundary

Data Sources:



Client
Buirios Ltd
Borrisbeg Renewable Energy Development

Title
Figure 1-1 Site Location

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1.4 The Applicant

The applicant for the Proposed Grid Connection, Buirios Ltd, is an associated company of Enerco Energy Ltd., which is an Irish-owned, Cork-based company with extensive experience in the design, construction and operation of wind energy and grid connection developments throughout Ireland, with projects currently operating or in construction in Counties Cork, Kerry, Limerick, Clare, Galway, Mayo and Donegal.

By Q2 2025, Enerco associated companies had over 925 Megawatts (MW) of wind generating capacity in commercial operation or in construction, with a further c.400MW of projects at various stages in its portfolio, including the Consented Wind Farm, to assist in meeting Ireland's renewable energy targets.

1.5 Description of the Proposed Grid Connection

The proposed development for the purposes of the accompanying Section 182A application comprises the provision of the following:

- i. *A 110 kilovolt (kV) 'loop-in/loop-out' Air-Insulated Switchgear (AIS) electrical substation, including 2 no. single-storey control buildings with staff welfare facilities, underground wastewater storage tank, all associated electrical plant, cabling, equipment and apparatus, and security fencing, within a substation compound with a total footprint of approximately 1.41ha;*
- ii. *2.1 kilometre 110kV underground cabling route, with 0.9km following the public road corridor and 1.2km along new proposed access track across agricultural grassland (including joint bays, communication and earth sheath link chambers and all ancillary works along the route);*
- iii. *2 no. lattice-type end masts with a height of 16 metres to facilitate connection to the existing 110kV Ikerrin-Thurles overhead electricity transmission line;*
- iv. *1 no. temporary construction compound (including offices and staff welfare facilities);*
- v. *Vegetation removal and Spoil Management;*
- vi. *Site Drainage; and*
- vii. *All ancillary works and apparatus.*

A ten-year planning permission is sought.

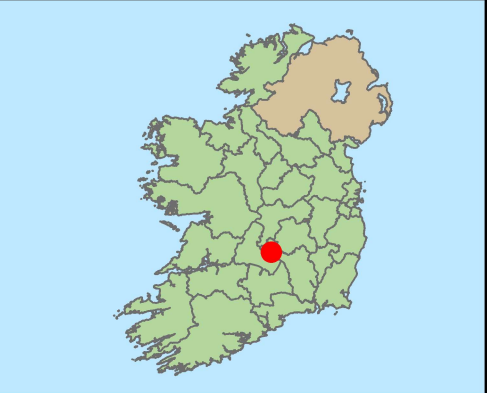
Upon decommissioning of the Consented Wind Farm, the Proposed Grid Connection will remain in situ and form part of the national grid infrastructure. The layout of the Proposed Grid Connection is illustrated on Figure 1-2 and Figure 1-3.



Legend

- EIAR Boundary
- 110kV Substation
- Temporary Construction Compound
- Joint Bays
- End Masts
- ◆ New Clear span crossing
- ◆ HDD crossing under bridge
- Field Drain Culverts
- Proposed Cabling Route with New Track
- Proposed Cabling Route in Public Road (to be upgraded)
- Field Drains
- EPA Watercourses

Data Sources: EPA



Client

Buirios Ltd

Borrisbeg Grid Connection

Title

Borrisbeg Grid Connection Design



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1.6 Need for the Proposed Grid Connection

Ireland has set ambitious targets for renewable energy, aiming for 80% of electricity generation to come from renewable sources by 2030. The government's Climate Action Plan outlines a pathway to achieve this, which includes substantial investments in wind and solar energy. The integration of these renewable sources into the grid requires new substations to manage the variability and ensure stability in the electricity supply. Ireland has experienced significant population growth in recent years, which has led to increased demand for electricity. According to the 2022 Census, Ireland's population was just over 5.1 million and projections indicate continued growth¹. This demographic trend necessitates an expansion of the electricity grid, including the construction of new substations to ensure reliable power supply to residential and commercial areas.

According to EirGrid's "Tomorrow's Energy Scenarios 2023", by 2050, electricity demand is projected to be more than double due to increased electrification in transport heating and industry. Achieving a net zero power system between 2040 and 2050 will require a significant expansion of renewable energy sources, particularly offshore wind and solar PV along with energy storage solutions and interconnections the transition necessitates for boost infrastructure development streamlined planning and permitting processes and supportive policies to facilitate rapid deployment of renewable technologies. The report highlights the necessity for grid upgrades and the development of new substations to accommodate the increasing demand for electricity and the variability of renewable sources.

EirGrid's Generation Capacity Statement 2023-2032 (January 2024) projects a 45% increase in electricity demand between 2023 and 2034 driven by factors such as population growth, electrification of transport and heating, and the expansion of data centres, with the latter projected to consume up to 30% of the country's electricity by 2030 if current trends continue. According to data from the CSO, electricity consumption by data centres has surged from 5% in 2021, the first year for which the CSO provided specific data on this sector, to 21% in 2023. This surge in demand necessitates the development of new substations to ensure that the grid can manage the increased load.

EirGrid's analysis indicates potential capacity gaps, particularly during periods of high demand and low renewable generation, necessitating timely procurement of new generation capacity through capacity market auctions. EirGrid's 2024 report underscores the progress made in integrating renewable energy into Ireland's electricity grid while highlighting the need for continued investment in infrastructure and capacity to meet future demand and ensure system reliability.

The Sustainable Energy Authority of Ireland (SEAI) released its 2024 National Energy Projections Report which provides insights into current energy consumption trends and future projections up to 2050 below lists a summary of the key findings.

- **Overall Energy Use:** Ireland's total energy requirement increased by 2.3% in 2024 with rises in oil, natural gas, renewables, and electricity consumption.
- **Fossil fuels:** Despite reductions in coal and peat usage, fossil fuels still comprise 81.4% of Ireland's energy supply in 2024.
- **Import Dependency:** Ireland's energy import dependency rose to 79.7% in 2024, up from 78.3% in 2023, surpassing the EU average of 58.3%.
- **Electricity Demand:** Final electricity consumption reached a record high in 2023, with the services sector accounting for over 50% of usage. Data centres accounted for 20.1 % of all electricity demand in 2023. For context, when the European Commission introduced a new

¹ [Census of Population 2022 - CSO - Central Statistics Office](#)

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sustainability rating scheme for data centres in 2024, it highlighted that these facilities accounted for roughly 3% of the EU's overall electricity demand.

- **Renewable Share:** Renewable energy supplied 14.5% of Ireland's energy requirements in 2024, a slight increase from 14% in 2023.
- **Solar and Heat Pumps:** Solar PV electricity generation increased by 66%, renewable ambient heat from heat pumps rose by 19% in 2024.
- **Wind and Hydro:** There were declines in wind and hydro generation in 2024 effecting overall renewable energy output.

EirGrid's Transmission Development Plan 2024 details its support for Ireland's Climate Action Plan 2025 goal of achieving 80% renewable electricity by 2030, which comprises 9GW onshore wind and 8GW solar PV. The Development Plan includes infrastructure projects to facilitate the connection of onshore and offshore wind, solar and energy storage systems. The plan identifies transmission capacity constraints and proposes targeted projects to alleviate these issues. At present just over 5GW is already connected and operational / under construction. Approx. 2.5GW has secured planning and is not yet built – such as the subject Consented Wind Farm which offers 63MW of onshore wind.

The National Planning Framework 2025 (NPF 2025) serves as a comprehensive guide for the development of grid infrastructure in Ireland, emphasising the need for integration with spatial planning, support for renewable energy, and the enhancement of resilience and security of supply. It highlights the critical role of grid infrastructure in facilitating economic growth and achieving national climate goals. The NPF sets out renewable electricity capacity allocations for each of the three Regional Assemblies, Northern and Western, Eastern and Midlands and the Southern Regions, by 2030. The Southern Region, within which the Proposed Grid Connection and Consented Wind Farm are located, has been allocated 978 MW of additional capacity by 2030 (40% of the National Share). As stated, the Consented Wind Farm can provide 63MW of this target; however, in order to do is, it needs a connection to the national grid.

The Tipperary County Development Plan 2022-2028 addresses grid connection development, particularly in the context of renewable energy projects. The Plan acknowledges the importance of expanding national supply grids to ensure regional connectivity and support sustainable economic growth:

'The Council will support the major service providers including EirGrid, ESB Networks and Gas Networks Ireland, where it is proposed to enhance or upgrade existing facilities or networks, or provide new infrastructure in order to extend or strengthen energy supply to meet demand and meet climate reduction targets.'

In summary, the necessity for the Proposed Grid Connection is influenced by several key factors:

- The Proposed Grid Connection will facilitate the energy transmission from the Consented Wind Farm to the national grid. The Consented Wind Farm, which has an anticipated installed capacity of 63MW, is projected to achieve a net reduction of around 58,808 tonnes of carbon dioxide each year, totalling approximately 1,764,240 tonnes over its 30 year operational life. A detailed description of the carbon offsets associated with the Proposed Grid Connection can be found in Chapter 10: Climate.
- The Proposed Grid Connection will facilitate the Consented Wind Farm in the production of an estimated 198,676 Megawatt hours (MWh) of electricity per year, enough to power approximately 47,304 Irish homes based on the following calculation:
 - $A \times B \times C = \text{Megawatt Hours of electricity produced per year where:}$
 - $A =$ The number of hours in a year: 8,760 hours

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- B = The capacity factor, which takes into account the intermittent nature of the wind, the availability of wind turbines and array losses etc. A capacity factor of 36%² is used here.
- C = Rated output of the wind farm: 63 MW
- The MWh of electricity produced by the Consented Wind Farm would be sufficient to supply a range of approximately 47,304 Irish households with electricity per year, based on the average Irish household using 4.2 MWh of electricity (this latest figure is available from the March 2017 CER Review of Typical Consumption Figures Decision).³
- The Proposed Grid Connection will help Ireland on its way legally binding target of achieving net-zero greenhouse gas emissions by 2050, with a 51% reduction by 2030, as mandated by the Climate Action and Low Carbon Development (Amendment) Act 2021.
- The Proposed Grid Connection will help the Southern Region Assembly in achieving its goal of adding 978MW of renewable energy to the national grid by 2030.
- The Proposed Grid Connection will form part of Ireland’s valuable strategic grid infrastructure portfolio, allowing future commercial, residential, renewable development within the region to meet projected demands.

On 6 August 2025 Ireland introduced new regulations: the European Union (Planning and Development) (Renewable Energy) Regulations 2025 to transpose certain requirements of RED III into Irish law. The objective of these new regulations is to ensure a faster deployment of renewables including supporting grid infrastructure, establish better environmental safeguards, ensure energy security and align the nations climate action goals with EU targets. Without these regulations, Ireland risked failing to meet its EU and national climate goals Furthermore, these Regulations strongly emphasise the importance of renewables, not just as an energy source, but as a matter of public interest and climate necessity. It underlines that renewables are essential infrastructure for Ireland’s climate targets, EU obligations, and energy security.

Ireland has progressed its grid infrastructure over the past decade. However, in order to meet the energy demands over the next decade and to facilitate Ireland’s commitment to meet its legally binding emissions and renewable energy targets, it is imperative an accelerated programme of grid infrastructure development is progressed across the State. The Proposed Grid Connection is a valuable step in achieving this much needed progression.

² <https://www.eirgridgroup.com/site-files/library/EirGrid/ECP-2-2-Solar-and-Wind-Constraints-Report-Area-I-v1.0.pdf>

³ Commission for Regulation of Utilities 2017: Review of Typical Consumption Figures – Decision Paper https://www.cru.ie/document_group/review-of-typical-consumption-figures-decision-paper/

1.7 Legislative Context

The consolidated European Union Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (the 'EIA Directive'), has been transposed into Irish planning legislation by the Planning and Development Act 2000 as amended and the Planning and Development Regulations 2001 as amended. Directive 2011/92/EU was amended by Directive 2014/52/EU which has been transposed into Irish law with the recent European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).

This EIAR complies with the EIA Directive as amended by Directive 2014/52/EU.

Article 5 of the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU provides where an EIA is required, the developer shall prepare and submit an environmental impact assessment report (EIAR). The information to be provided by the developer shall include at least:

- a. a description of the project comprising information on the site, design, size, and other relevant features of the project;
- b. a description of the likely significant effects of the project on the environment;
- c. a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;
- d. a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;
- e. a non-technical summary of the information referred to in points (a) to (d); and
- f. any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.

In addition, Article 94 of the Planning and Development Regulations 2001 (as amended) sets out the information to be contained in an EIAR, with which this EIAR complies.

1.7.1 Requirement for EIA

RPS has been appointed to prepare this EIAR in accordance with the requirements of the EIA Directive to allow the competent authority, An Coimisiún Pleanála to undertake an EIA of the Proposed Development. The Consented Wind Farm underwent a mandatory EIA and therefore, this EIAR is volunteered for the Proposed Grid Connection which is required to facilitate the transmission of renewable energy from the Consented Wind Farm to the national grid. The EIAR provides a study of the receiving environment and assesses the potential for significant impacts on the environment due to the construction and/or operation of the Proposed Grid Connection by itself or in cumulation or combination with other planned and proposed. It also recommended measures for mitigation and monitoring measures to prevent or lessen these impacts, where necessary.

1.8 Environmental Impact Assessment Process

Figure 1-4 outlines the overall Environmental Impact Assessment (EIA) process and the key activities undertaken for the Proposed Grid Connection during project inception, preparation, and completion of the EIAR (EPA, 2022).

1.9 Guidance

This EIA has been prepared in accordance with the requirements of the Planning and Development Regulations 2001 (as amended) (as amended and substituted) and the EIA Directive. The preparation of documents associated with the EIA (EIA Screening, Scoping and EIAR) has been informed by relevant international and national EIA guidelines including the following:

- “Guidelines on Information to be Contained in Environmental Impact Assessment Reports” (EPA, 2022)
- “Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment,” (Department of Housing, Planning and Local Government, 2018)
- “Environmental Impact Assessment of Projects-Guidance on Screening (Directive 2011/92/EU as amended by 2014/52/EU)” (European Commission, 2017a)
- “Environmental Impact Assessment of Projects–Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU)” (European Commission, 2017b)
- “Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report” (European Commission, 2017c)
- “Advice Notes on Current Practice in the Preparation of Environmental Impact Statements” (EPA, 2003).

In addition to the applicable EIA legislation and guidance, relevant EU Directives, national legislation, and guidance relating to the specialist areas have also been considered as part of the process and are addressed in each of the relevant assessment chapters contained in this EIAR.

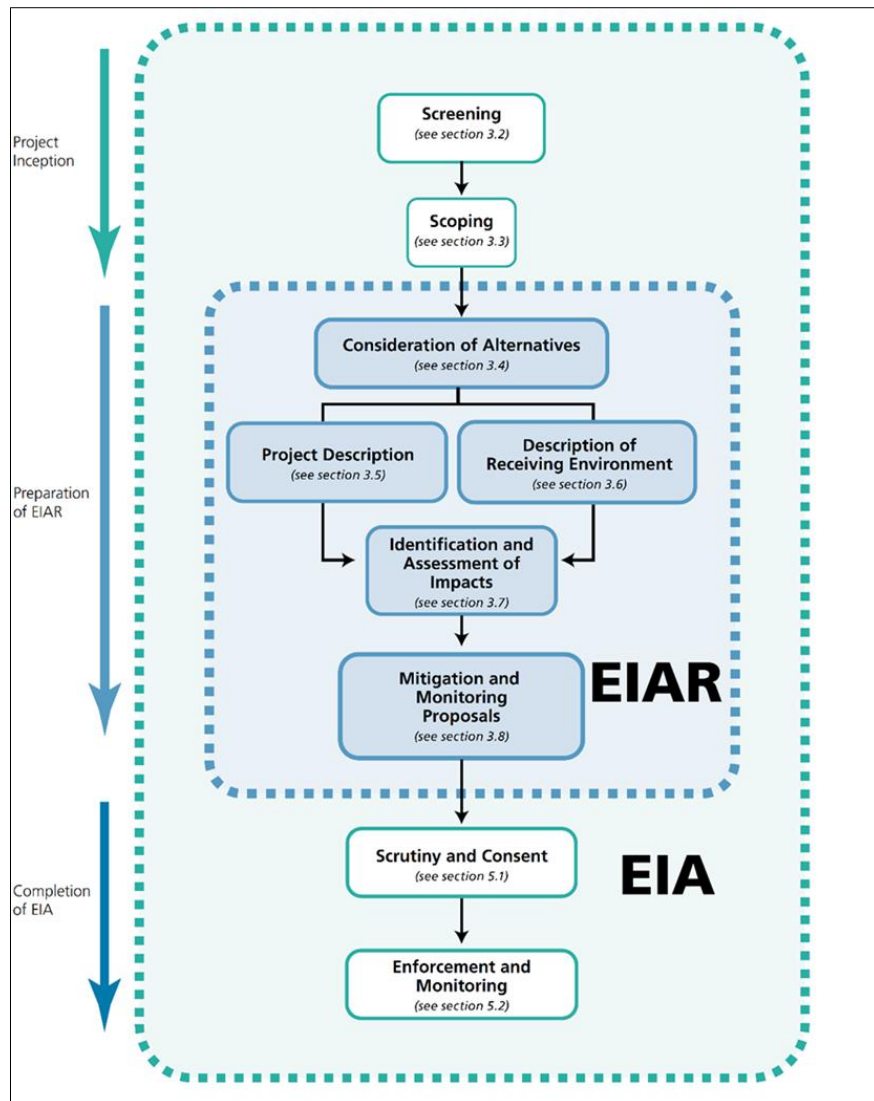


Figure 1-3: The EIA Process. EPA (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports

The EIA process involves a number of steps which includes the production of an EIAR, although this is not the end in itself but rather an output to assist in a wider decision-making framework. The (EPA, 2022) define EIA as:

“The process of examining the anticipated environmental effects of proposed project - from consideration of environmental aspects at design stage, through consultation and preparation of an EIAR, evaluation of the EIAR by a competent authority, the subsequent decision as to whether the project should be permitted to proceed, encompassing public response to that decision.”

An EIAR is a statement prepared by the developer, providing information on the significant effects on the environment based on current knowledge and methods of assessment. It is conducted by competent experts, with appropriate expertise to provide informed assessment on the environmental factors as required under the EIA Directive. The EIAR consists of a systematic analysis and assessment of the potential effects of a Proposed Grid Connection on the receiving environment. The EIAR specifically:

- Provides statutory and non-statutory consultees with technical information to enable an understanding of the Proposed Grid Connection.

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- Provides a description of the reasonable alternatives considered for the Proposed Grid Connection and an indication of the main reasons for the options were selected including taking into account the effects of the Proposed Grid Connection on the environment.
- Presents the existing environmental baseline information established from desktop studies, site-specific surveys and/ or consultation.
- Indicates any limitations encountered during the compilation of the environmental information, including the acknowledgement of any data gaps or deficiencies and confidence in the information gathered.
- Describes the methodology used within the EIA process.
- Presents the potential environmental effects arising from the Proposed Grid Connection. This will be based on the baseline information coupled with the analysis and impact assessments completed.
- Proposes mitigation measures to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment. Where mitigation measures have been identified, the residual significance of effects has also been identified.

1.10 Description of Likely Significant Effects and Impacts

An assessment of the likely impacts of a development is a statutory requirement of the EIA process Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA, May 2022). The statutory criteria for the presentation of the characteristics of potential impacts requires that potential significant impacts be described with reference to the extent, magnitude, complexity, probability, duration, frequency, reversibility, and trans--boundary nature (if applicable) of the impact.

The classification of impacts in this EIAR follows the definitions provided in the Glossary of Impacts contained in the EPA 2022 Guidelines document. Table 1-1 presents the glossary of impacts as published in the EPA guidance documents. European Commission guidance documents as listed in Section 1.7.1 have also been consulted.

Table 1-1: Description of Effects (EPA 2022 Guidelines on the information to be contained in Environmental Impact Assessment Reports)

Quality of Effects It is important to inform the non-specialist reader whether an effect is positive, negative or neutral.	Positive Effects A change which improves the quality of the environment (for example, by increasing species diversity, or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
	Neutral Effects No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error. Negative/Adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance)
	Negative/Adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing

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	the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance)
Describing the Significance of Effects ‘Significance’ is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see Determining Significance).	Imperceptible An effect capable of measurement but without significant consequences.
	Not Significant An effect which causes noticeable changes in the character of the environment but without significant consequences.
	Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
	Significant Effects An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment.
	Very Significant An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment.
	Profound Effects An effect which obliterates sensitive characteristics.
Describing the Extent and Context of Effects Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.	Extent Describe the size of the area, the number of sites and the proportion of a population affected by an effect.
	Context Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Describing the Probability of Effects Descriptions of effects should establish how likely it is that the predicted effects will occur so that the CA can take a view of the balance of risk over advantage when making a decision.	Likely Effects The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
	Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Describing the Duration and Frequency of Effects ‘Duration’ is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.	Momentary Effects Effects lasting from seconds to minutes.
	Brief Effects Effects lasting less than a day.
	Temporary Effects Effects lasting less than a year.
	Short-term Effects Effects lasting one to seven years.
	Medium-term Effects Effects lasting seven to fifteen years.

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	Long-term Effects Effects lasting fifteen to sixty years.
	Permanent Effects Effects lasting over sixty years.
	Reversible Effects Effects that can be undone, for example through remediation or restoration.
	Frequency of Effects Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)
Describing the Types of Effects	Indirect Effects (a.k.a. Secondary or Off-site Effects) Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
	Cumulative Effects The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects.
	‘Do-nothing Effects’ The environment as it would be in the future should the subject project not be carried out.
	‘Worst-case’ Effects The effects arising from a project in the case where mitigation measures substantially fail.
	Indeterminable Effects When the full consequences of a change in the environment
	Irreversible Effects When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost
	Residual Effects The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
	Synergistic Effects Where the resultant effect is of greater significance than the sum of its constituents (e.g., combination of SO _x and NO _x to produce smog)

1.11 Limitations

There were no limitations or technical difficulties encountered during the preparation of this EIAR.

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1.12 Structure of the EIAR

The EIAR is divided into three volumes:

- **Volume A:** Non-Technical Summary (NTS) and EIAR
- **Volume B:** Technical Appendices

Table 1-2 provides a breakdown of the contents of the EIAR volumes and the organisations that have contributed to the EIAR.

Table 1-2: EIAR Structure, Content, and Contributors

Volume	No.	Chapter/Report	Competent expert
Volume A: NTS and EIAR Main Body	-	NTS	Paul Chadwick
	1	Introduction	Paul Chadwick
	2	Assessment of Alternatives	Paul Chadwick
	3	Development Description	Paul Chadwick
	4	Population and Human Health	Paul Chadwick
	5	Biodiversity	Rob Rowlands
	6	Major Accidents & Natural Disasters	Paul Chadwick
	7	Land, Soil, Geology	Michael Gill – Hydro Environmental Services
	8	Hydrology and Hydrogeology	Michael Gill – Hydro Environmental Services
	9	Air Quality	Paul Chadwick
	10	Climate	Paul Chadwick
	11	Noise and Vibration	Dermot Blunnie – Awn Consulting
	12	Landscape and Visual	Richard Barker -- Macroworks
	13	Material Assets including Traffic & Transport	Paul Chadwick, Alan Lipscombe Traffic Consulting
	14	Cultural Heritage	Miriam Carroll Tobar Archaeology
	15	Interactions and Cumulative Effects	Paul Chadwick
	16	Schedule of Environmental Commitments	Paul Chadwick

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1.13 Study Team

The list of the EIAR contributors outlining their competence and experience, including relevant qualifications is provided in **Table 1-3**.

Table 1-3: Qualifications and Experience of EIAR Competent Experts

Expert	Qualifications	Relevant Experience
RPS: Paul Chadwick	BA (Hons), MPhil,	Paul is a Technical Director with the Energy, Environment and Resources Sector and leads the team responsible for environmental, waste and resource management and assessment of infrastructural and industrial projects for RPS in Ireland. Paul specialises in the fields of air quality and climate. He has considerable experience, both academic and professional, in ambient air quality and a wide range of atmospheric pollutants from waste / wastewater, road traffic, air traffic, industrial and stationary sources. As a result of two years research in atmospheric chemistry, he has an in-depth knowledge of the chemical and physical transformations associated with local and regional air pollution and climate change. Paul is a trained and experienced expert witness and is supported by a team of multidisciplinary environmental experts across RPS in Ireland.
RPS: Dr Robert Rowlands	BSc (Hons) PhD MCIEEM CEnv	Dr Rob Rowlands is a Technical Director in RPS with over 20 years' experience. He is an experienced multi-disciplinary project manager; in particular, advising on strategy with respect to ecology, landscape, heritage/archaeology and arboriculture. He is an experienced ecologist. His ecological experience has included the completion of Ecological Impact Assessments (including for EIA) and AAs with respect to the Habitats and Birds Directive.
Valerie Brennan	MSc T&C Planning, BA International (Hons), MIPI, MRTPI	Valerie is the Director of the Planning Business Unit. She manages a team of professional Planners who work alongside other specialists within the Environment, Planning and Renewables Sector. She is a Chartered Town Planner and is Past Chair of the Irish branch of the Royal Town Planning Institute (RTPI). She is a member of the RTPI Ireland Executive Committee and is therefore party to the Oversight Group of the Planning and Development Act 2024. She is an electrical infrastructure specialist and has an excellent variety of experience having worked on a full time Secondment to EirGrid from 2019-2021 and has also experience of the public, private and semi-state sectors including periods of secondment / semi-secondment / employment with Uisce Eireann, the Dublin Airport Authority and Coillte (what is now FuturEnergy Ireland). Valerie has 21 years professional planning experience advising on a wide range of strategic infrastructure, commercial and renewable energy projects in both the maritime and the terrestrial environments. She has completed PMI training and has experience of project management, portfolio management, commercial development and business development roles.
Karen Mulryan	BA Hons, MSc, MIAI, ACIfA	Karen is a Senior Scientist at RPS with over 9 years of experience in the consultancy sector. Karen holds a BA International in Archaeology from NUI Galway and a MSc in Archaeology from the University of Edinburgh. Karen manages EIAR applications of various scales including SID applications across Ireland Karen authors and coordinates EIAR assessments and surveys, feasibility, screening and scoping

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Expert	Qualifications	Relevant Experience
		reports, and constraint studies for SID projects such as wind, grid and flood relief schemes. Karen holds memberships with the Chartered Institute for Archaeologists (ACIfA) and the Institute of Archaeologists of Ireland (IAI).
David Broderick	P. Geo. BSc, H. Dip Env Eng, MSc	David Broderick P. Geo. (BSc, H. Dip Env Eng, MSc) is a Hydrogeologist with over 17 years' experience in both the public and private sectors. Having spent two years working in the Geological Survey of Ireland working mainly on groundwater and source protection studies David moved into the private sector. David has a strong background in groundwater resource assessment, karst hydrology and hydrogeological/hydrological investigations in relation to developments such as quarries and wind farms. David has completed numerous geology and water sections for input into EIARs for a range of commercial developments. David has worked on the EIS/EIARs for Ardderroo Wind Farm, Knockalough Wind Farm, and Oweninny Wind Farm, and over sixty other wind farm related projects across the country. David worked on his first wind energy project in 2010, and he has continued to work on similar projects since then.
Michael Gill	P. Geo. B.A.I., MSc, Dip. Geol., MIEI	Michael Gill P. Geo. (B.A.I., MSc, Dip. Geol., MIEI) is a Civil/Environmental Engineer and Hydrogeologist with over 24 years' environmental consultancy experience in Ireland. Michael has completed numerous hydrological and hydrogeological impact assessments of wind farms in Ireland. He has also managed EIAR assessments for infrastructure projects and private residential and commercial developments. Michael has substantial experience in wastewater engineering and site suitability assessments, contaminated land investigation and assessment, karst hydrology/hydrogeology, water resource assessments, surface water drainage design and SUDs design, and surface water/groundwater interactions. For example, Michael has completed numerous hydrological and hydrogeological impact assessments of wind farms and renewable projects in Ireland. He has substantial experience in surface water drainage design and SUDs design and surface water/groundwater interactions. For example, Michael has worked on the EIS/EIARs for Borrisbeg WF, Oweninny WF, Cloncreen WF, Derrinlough WF, and Yellow River WF, and over one hundred other wind farm-related projects.
Alan Lipscombe	BSc, Eng	In January 2007 Alan Lipscombe set up an independent traffic and transportation consultancy providing advice for a range of clients in the private and public sectors. Prior to this Alan was a founding member of Colin Buchanan's Galway office having moved there as the senior transportation engineer for the Galway Land Use and Transportation Study. Since the completion of that study in 1999, Alan has worked throughout the West of Ireland on a range of projects including: major development schemes, the Galway City Outer Bypass, Limerick Planning Land-Use and Transportation Study, Limerick Southern Ring Road Phase II, cost benefit analyses

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Expert	Qualifications	Relevant Experience
		(COBA) and various studies for the NUI Galway. Before moving to Galway in 1997, Alan was involved in a wide variety of traffic and transport studies for CBP throughout the UK, Malta and Indonesia. He has particular expertise in the assessment of development related traffic and transport modelling, including for numerous wind farm developments, and is an accomplished analyst who has experience of a wide variety of modelling packages and methods.
Miriam Carroll	BA Hons, MSc, MIAI,	Tobar Archaeological Services is a Cork-based company in its 22nd year in business. They offer professional nationwide services ranging from pre-planning assessments to archaeological excavation, and cater for clients in state agencies, private and public sectors. Tobar's Director, Miriam Carroll, is licensed by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs to carry out excavations in Ireland and has carried out work directly for the National Monuments Services of the Department of the Environment, Heritage and Local Government. Tobar Archaeological Services has a proven track record and extensive experience in the wind farm industry from EIS/EIAR stage through to construction stage when archaeological monitoring is frequently required. Miriam holds a Degree in Archaeology (1993- 1996) and a 2-year Masters in Methods and Techniques in Irish Archaeology (1996-1998) from UCC and has over 20 years' experience in private sector archaeology. Miriam has managed and co-ordinated numerous projects from commencement stage to completion on behalf of numerous small and large companies
Miguel Cartuyvels	BEng, TechIOA.	Miguel Cartuyvels (Acoustic Consultant) holds a BEng (Hons) in Industrial Engineering and is a member (TechIOA) of the Institute of Acoustics. Miguel previously worked in the construction industry and has worked in the field of acoustics since 2021, where he has contributed to numerous projects related to environmental surveying, noise modelling, and impact assessment for various sectors, including wind energy, industrial, commercial, and residential.
Alistair Maclaurin	BSc, Dip Acoustics & Noise Control, MIOA	Alistair Maclaurin (Senior Acoustic Consultant) holds a BSc in Creative Music and Sound Technology and a Diploma in Acoustics and Noise Control. He is a member of the Institute of Acoustics. Alistair has worked in the field of acoustics since 2012. He has been the lead noise consultant across various sites on major infrastructure projects such as Crossrail and Thames Tideway Tunnel, specialising in construction noise assessment and control. Additionally, he has undertaken various other environmental noise assessments for infrastructure developments and planning reports.
Richard Barker	BA Env, MSc, Dip Forestry	Richard Barker is the Divisional Director of Macro Works Ltd; a landscape consultancy firm specialising in LVIA along with associated visibility mapping and photomontage graphics. Relevant experience includes LVIA work for a vast range of infrastructural, industrial and commercial projects since 1999 including more the 200 onshore wind farms and associated grid infrastructure.

1.14 Viewing and purchasing the EIAR

Copies of this EIAR including the Non-Technical Summary will be available online on the Planning Section of An Coimisiún Pleanála website, under the relevant Planning Reference Number (to be assigned on lodgement of the application). An Coimisiún Pleanála: <http://www.pleanala.ie/>.

This EIAR and all associated documentation will also be available for viewing at the offices of An Coimisiún Pleanála and Tipperary County Council. The EIAR may be inspected free of charge or purchased by any member of the public during normal office hours at the following addresses:

The EIAR will also be available to view online via the Department of Planning, Housing and Local Government's EIA Portal, which will provide a link to the planning authority's website on which the application details are contained. This EIA Portal was recently set up by the Department as an electronic notification to the public of requests for development consent which are accompanied by an EIAR. (<https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal>).

An Coimisiún Pleanála 64 Marlborough Street,
St. Rotunda,
Dublin 1.

Tipperary County Council,
Civic Offices,
Emmet Street,
Clonmel Co. Tipperary.

The EIAR will also be available to view online via the Department of Planning, Housing and Local Government's EIA Portal, which will provide a link to the planning authority's website on which the application details are contained. This EIA Portal was recently set up by the Department as an electronic notification to the public of requests for development consent which are accompanied by an EIAR. (<https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal>).

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